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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YANN LE GALLO

Appeal 2008-003348
Application 10/673,027
Technology Center 2800

Decided:¹ June 17, 2009

Before EDWARD C. KIMLIN, TERRY J. OWENS, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

¹ Two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

DECISION ON APPEAL

Appellant seeks review under 35 U.S.C. § 134 from the Examiner's rejections of pending claims 1-26 in the final Office Action dated March 14, 2006. This Board has jurisdiction under 35 U.S.C. § 6(b). For the reasons set forth below, we AFFIRM-IN-PART.

STATEMENT OF THE CASE

The invention of the present application is directed to a system which detects obstructions in the path of a vehicle openable member, such as a powered window. The system includes a direct detector and an indirect detector. The direct detector comprises a light sensor, which may detect the light along the closing line of the window. (*See* Spec. 2). The indirect detector uses information on the position of the window derived from the window drive system (*see* Spec. 9, ¶ [45]).

Claims 1, 6-8, and 18 are illustrative and reproduced below:

1. A system that detects an obstruction in a path of an openable vehicle member, comprising:
a direct detector that directly detects the obstruction, the direct detector including a sensor;
and
an indirect detector that indirectly detects the obstruction and outputs openable member position information to the direct detector, wherein the openable member position information is used to define operating parameters of the direct detector.
6. The system of claim 1, wherein the direct detector detects the obstruction according to the openable member position information provided by the indirect detector.

7. A method for detecting an obstruction in the path of an openable member, comprising the steps of:

indirectly detecting the obstruction by detecting a force exerted by the obstruction on the openable member using an indirect detector;

outputting openable member position information;

directly detecting the obstruction in the path of the openable member with a direct detector based on the openable member position information, wherein the direct detector includes a sensor; and

using the openable member position information to define operating parameters of the direct detector.

8. The method of claim 7, wherein the step of directly detecting the obstruction comprises detecting a light distribution along a closing line of the openable member.

18. The system of claim 1, wherein the operation of the direct detector is adapted according to the openable member position information outputted by the indirect detector.

The Examiner relies on the following prior art references as evidence of unpatentability of the rejected claims:

O'Connor
Breed

WO 01/36772 A1
US 6,442,465 B2

May 25, 2001
Aug. 27, 2002

The Examiner maintains the following rejections of the pending claims, for which Appellant seeks review:

1. Claims 1-4, 6-15, and 17-26 stand rejected under 35 U.S.C. § 102(b) as anticipated by O'Connor.

2. Claims 5 and 16 stand rejected under 35 U.S.C. § 103(a) as obvious over O'Connor in view of Breed.

Regarding rejection (1), Appellant argues the same feature with regard to claims 1-4, 7, 14, 15, 19, 20, 22, 23, 25, and 26 (App. Br. 4-9). We select claim 1 as representative of the argued group. Appellant argues the same feature with regard to claims 6 and 17 (App. Br. 6, 9-10). We select claim 6 as representative of the group. Appellant argues claims 8-13 as a group, of which we select claim 8 as representative (App. Br. 8). Appellant argues claims 18, 21, and 24 as a group of which we select claim 18 as representative (App. Br. 10).

Regarding rejection (2), Appellant advances the same argument made regarding claim 1 (App. Br. 11). We address Appellant's argument regarding rejection (2) to the extent that it has been separately argued.

CLAIM 1

The Examiner finds that O'Connor teaches all limitations of the claimed invention, including that openable member information provided by the indirect detector is used as operating parameters of the direct detector (Ans. 3-4).

Appellant contends O'Connor does not teach using openable member position information provided by the indirect detector *to define* operating parameters of the direct detector as required by claim 1 (App. Br. 4-7). Appellant contends, rather, that O'Connor discloses a system in which position information is used *as* an operating parameter (*Id.*).

The Examiner found the limitation was anticipated by O'Connor because the system in O'Connor discloses one with a controller that received "position information as operating parameters to dynamically adapt (*adjust*) each director output signal" (Ans. 6).

ISSUE

Has Appellant shown the Examiner reversibly erred in finding O'Connor discloses a system in which openable member position information from the indirect detector (i.e., the contact-based system) is used to define operating parameters of the direct detector (i.e., the non-contact based system)?

FINDINGS OF FACT

1. The Specification discloses a system which detects obstructions in the path of a vehicle openable member, such as a powered window. The system includes a direct detector and an indirect detector (Spec. ¶ [10]).
2. The Specification states the system includes a direct obstruction detector ("direct detector") and an indirect obstruction detector ("indirect detector"). The direct detector comprises a light sensor, which may detect the light along the closing line of the window (Spec. ¶ [10]).
3. The Specification states the indirect detector uses a force exerted by an obstruction on an openable member to indirectly detect an obstruction (Spec. ¶ [10]).

4. The Specification states the indirect detector provides openable member position information to the direct detector (Spec. ¶ [10]).
5. The Specification describes a detector 14 placed in a lower corner of a window opening and may comprise a charge-coupled device (“CCD”) and a focusing lens (Spec. ¶¶ [23]-[26]). The detector CCD comprises a plurality of pixels or picture elements, each of which detects the amount of light received from a point along the upper edge of the window opening (Spec. ¶ [26]). An obstruction in the opening will cause a change in light levels detected by the pixels aligned with the position of the obstruction (Spec. ¶¶ [26]-[28]).
6. The Specification states that the intensity of light falling on the individual pixels of the CCD may be used to develop a histogram of light levels across the length of the window opening upper edge. In one embodiment, an array of 128 x 128 pixels is used. Preferably, 10 pixels of each row of the CCD sensor are used for each point on the histogram (Spec. ¶¶ [27]-[30]). The Specification further indicates that the term “upper edge” may be replaced by the term “closing contact line” of the openable member (Spec. ¶ [59]).
7. The Specification explains that a supplemental light source, particularly an infrared light, may be provided in low ambient light environments (Spec. ¶ [40]).
8. The Specification describes a force detection circuit 52, part of the drive system for operating an openable member. The force detection circuit detects the presence of an obstruction indirectly by detecting a force greater than a nominal one for closing the openable member by the drive system (Spec. ¶ [45]).

9. The Specification further describes a contactless detector 54, which is in communication with the force detection circuit and the motor. It can interrupt the operation of the motor that operates the openable member (Fig. 5, ¶ [47]).
10. In the Specification, the detector 14 is classified as a direct detector (Spec ¶ [47]). The system may include an indirect detection circuit 52, which constitutes an indirect detector (Spec. ¶¶ [45] and [49]).
11. The Specification describes that position information 58 is applied to the contactless detector 54 from the force detection circuit 52 (Spec. ¶ [50], Fig. 5). The position information may be used to adjust the detection threshold (Spec. ¶ [51]).
12. O'Connor describes a system for detecting an obstruction in a vehicle window opening, comprising a contact-based (i.e., the indirect detector) and a non-contact-based detection system (i.e., the direct detector) (Abstract; p. 4, ll. 14-18).
13. In O'Connor, the non-contact system includes an emitter of a field of energy (light) and a receiver to detect a portion of the emitted light reflected or obscured (p. 8, ll. 1-13).
14. O'Connor discloses that the emitter/receiver units of the non-contact system include emitters that produce a field of energy and receivers that detect any portion of the respective field of energy that is reflected back (p. 8, ll. 1-13).
15. O'Connor teaches if the non-contact system has once failed to register an obstacle, but the contact-based system has exhibited a significantly slower motor rotation rate or a closure position which is short of the fully closed position within the aperture, an obstacle

16. detection may be recognized, and the thresholds for the non-contact system may be adjusted incrementally in order to increase the sensitivity of the non-contact system (p. 27, ll. 20-27).
17. O'Connor discloses a contact system that detects changes in the operating characteristics of the closure, including time-based and motor-characteristic based systems (p. 17, ll. 17-21). The time-based system may include use of a predetermined time for a closure to reach a fully closed position to determine whether an obstruction is present (p. 17, ll. 22-25). The motor characteristic-based system may include monitoring the motor, such as a ripple counter on the power supply to the motor, to determine window position (p. 20, ll. 3-21).
18. O'Connor teaches the contact-based system may be considered in conjunction with the non-contact system over the entire range of closure travel (p. 27, ll. 28-30). The controller may then employ multiple factors of the non-contact and contact systems to establish the presence of an obstacle (p. 27, ll.30-32). One of these factors may include the closure's absolute position (p. 28, l. 5).
19. O'Connor teaches a controller 202 that may control a hybrid system comprising a contact and a non-contact detection systems. This controller 202 may be the controller 38 of the non-contract system (p. 23, ll. 22-29).
20. O'Connor teaches the controller 202 may have associated with it memory for storing the threshold values for both detection systems and the appropriate actions to take depending on which thresholds are achieved (p. 26, l. 31 – p. 27, l. 3). The controller 202 also receives

21. input from both systems and can detect obstacles based on the position information of both systems (p. 24, l. 30 – p. 25, l. 2).
22. The Merriam Webster dictionary defines “define” as, “to fix or mark the limits of; demarcate.” *Merriam-Webster’s Collegiate Dictionary* 303 (10th ed. 1996).
23. The Merriam Webster dictionary defines “parameter” as, “any of a set of physical properties whose values determine the characteristics or behavior of something.” *Merriam-Webster’s Collegiate Dictionary* 843 (10th ed. 1996).
24. The Merriam-Webster dictionary defines “adapt” as, “to make fit (as for a specific or new use or situation) often by modification.” *Merriam-Webster’s Collegiate Dictionary* 13 (10th ed. 1996).
25. The Merriam-Webster dictionary defines accord as, “to be consistent or in harmony; agree.” *Merriam-Webster’s Collegiate Dictionary* 7 (10th ed. 1996).

PRINCIPLES OF LAW

Claims are given the broadest reasonable construction consistent with the Specification. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). The Patent and Trademark Office (“PTO”) determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior

art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 827 (1987)

“It is well settled that the recitation of a new intended use for an old product does not make a claim to that old product patentable.” *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997).

“[W]here the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied upon.” *In re Best*, 562 F.2d 1252, 1254-55 (CCPA 1977).

ANALYSIS

We begin by construing the disputed claim phrase, “openable member position information to define operating parameters.” We must give the claim phrase the broadest reasonable construction in light of the Specification. *Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d at 1364.

All the pending claims in this appeal include, either directly or indirectly by dependency, the claim phrase, “wherein the openable member position information [from the indirect detector] is used to define operating parameters of the direct detector” (*see, e.g.*, claim 1). The parties dispute the definition or scope of this limitation, particularly, the meaning of *defining* an operating parameter.

The Examiner’s construction is implied from the context of the arguments. The Examiner contends that the prior art teaches the use of an indirect detector “and mentions various manners in which an obstruction

may be detected indirectly and provide position information as operating parameters to dynamically adjust the direct detector” (Ans. 3). Appellant points out the limitation is “to define”, not “to use as,” operating parameters (App. Br. 4). The Examiner responds that the term, “define” is vague and redundant, and that one of ordinary skill would “recognize[d] that to use an operating parameter it has to be first determined (sensed) in a particular way, to further carry on a task” (Ans. 6-7).

In construing a claim, we must give a claim term the broadest reasonable interpretation consistent with and in light of the Specification, as it would be interpreted by one of ordinary skill in the art. *Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d at 1364. Neither party points to any unique or particular definition or connotation in the Specification of the claim phrase regarding defining operating parameters. Likewise, after reviewing the Specification we find no definition of “define” as used in the claims.

The relevant definition of “define” according to the Merriam Webster dictionary is “to fix or mark the limits of: demarcate” (FF 20). In the context of the claim limitation, the position information from the indirect detector must be used to define *operating parameters* of the direct detector. A parameter is “any of a set of physical properties whose values determine the characteristics or behavior of something” (FF 21).

Thus, we construe to define operating parameters as to demarcate a set of physical properties whose values determine the operating characteristics of the direct detector. With this construction of the disputed claim phrase, we now address Appellant’s arguments.

Appellant argues that O’Connor does not teach a system in which the openable member position information of an indirect detection system is

used to define the operating parameters of a direct detection system (App. Br. 4-8). In analyzing this argument, we first note O'Connor refers to two subsystems of its detection system as "contact" and "non-contact" systems (FF 12). The contact system is based on the operating characteristics of the motor operating the window closure. These characteristics may include a counter on the number of pulses transmitted in the power supply to the motor (FF 16). This corresponds to the claim limitation of an indirect system, as described by Appellant's Specification (FF 8-10). O'Connor's non-contact system utilizes a light emitter and detector in the window opening, and corresponds to the claim limitation of a direct detector (FF 2, 5 and 10).

After fully reviewing the O'Connor disclosure, we do not agree with Appellant's contention, for two reasons. First, the claims in which this issue arises (other than claims 7-13) are directed to a system. O'Connor discloses a system including a controller which is able to receive input as an indication of closure position (openable member position information) from the contact-based (indirect) system. The controller can also utilize input, e.g., detected energy levels, from which the controller defines an operating parameter, e.g., offset, of the non-contact (direct) system for future cycles (FF 12-17). While this example does not disclose the specific limitation at issue, it does provide a reasonable basis to believe the O'Connor system is inherently capable of adjusting operating parameters of the non-contact system based on available closure position information from the contact system. *Best*, 562 F.2d at 1254-55. Appellant has not shown the O'Connor system is incapable of performing this function.

Second, O'Connor explicitly teaches,

[I]f the non-contact system has once again failed to register an obstacle, but the contact-based system has exhibited a significantly slower motor rotation rate or a closure position which is short of the fully closed position within the aperture, an obstacle detection may be recognized, and the thresholds for the non-contact system may be adjusted incrementally in order to increase the sensitivity of the non-contact system.

O'Connor 27, ll. 20-27 (see FF 15).

This passage teaches that if closure position (openable member position information) obtained from the contact-based (indirect) system is abnormal, due possibly to an obstacle, the thresholds (an operating parameter) of the non-contact (direct) system may be adjusted to increase the sensitivity of the non-contact (direct) system. In other words, the openable member position information from the contact-based system is used to demarcate and thus adjust threshold values for the non-contact system. Accordingly, we find this disclosure corresponds with the limitation of, “an indirect detector that indirectly detects the obstruction and outputs openable member position information to the direct detector, wherein the openable member position information is used to define operating parameters of the direct detector” of claim 1.

Accordingly, we decide the first issue negatively. We affirm the Examiner's § 102(b) rejection of claims 1-4, 7, 14, 15, 19, 20, 22, 23, 25, and 26 over O'Connor. Because Appellant advances the same arguments regarding the § 103 rejection, we affirm the § 103 rejection of claims 5 and 16 over O'Connor in view of Breed for the same reasons.

CLAIM 6

The Examiner found O'Connor teaches that the non-contact detector detects obstructions according to the position information provided by the contact detector (Ans. 4).

Regarding claim 6, Appellant contends O'Connor does not teach a system in which a direct detector detects an obstruction according to openable member position information provided by an indirect detector (App. Br. 6, and 9-10). Appellant acknowledges that O'Connor discloses a system in which a controller is able to dynamically adjust a direct (non-contact) system's parameters when contrary information is received from the contact and non-contact system. However, Appellant contends, the adjustment is made from measurements of the direct (non-contact) system, not made according to position information of the closure (App. Br. 7).

ISSUE

Has Appellant shown the Examiner reversibly erred in finding O'Connor disclosed a system in which a direct detector detects an obstruction according to openable member position information provided by an indirect detector?

FACTUAL FINDINGS & PRINCIPLES OF LAW

We rely on the factual findings and principles of law noted above.

ANALYSIS

Based on Merriam-Webster's dictionary, something is "in accord with" or is "according to" something, if it is consistent or in harmony with something (FF 23). O'Connor points out that inputs from both the direct and indirect detection systems may be utilized over the entire range of closure travel, or may be invoked only within a specific portion of the range of

closure travel. Either or both of the constituent systems may be used to ascertain the location of the closure (FF 16). In other words, O'Connor teaches the outputs from the direct and indirect detection systems are complementary and may be used either together or separately in detecting either the position of the openable member position or if an obstruction is present (FF 17).

In fact, O'Connor discloses that when the closure position is sensed by the contact-based system (i.e., the indirect detection system) to be short of the fully closed position, obstacle detection may be recognized and the threshold values of the non-contact system (i.e., the direct detection system) may be adjusted to increase the sensitivity (FF 15). In other words, the indirect system detects an obstacle and relays that information to the direct system, such that direct system may detect an obstacle based upon the openable member position information provided by the non-contact detector.

In traversing the rejection of claim 6, Appellant's arguments focus on O'Connor's first embodiment wherein the non-contact or direct detector is used alone over certain portions of the window opening (App. Br. 6 and 9-10). However, Appellant does not address the Examiner's reliance on O'Connor's hybrid system embodiment that utilizes the non-contact and contact detectors over the entire range of closure travel (Ans. 4). The controller 202 of the hybrid system, which can also be the direct system controller, may have associated with it a memory for storing threshold values for both systems and the appropriate actions to be taken depending upon which thresholds are achieved (FF 19). Also, the controller 202 receives input from both systems and can detect obstacles based on the position information from both systems. (FF 19). Thus, the direct system,

by its controller serving dual roles, can operate according to position information received from the indirect system.

For both the foregoing reasons, we decide the fourth issue negatively. We affirm the Examiner's § 102 rejection of claims 6 and 17 over O'Connor.

CLAIM 8

Regarding claim 8, Appellant contends that O'Connor does not disclose the step of detecting a light distribution along a closing line of the openable member (App. Br. 8).

ISSUE

Has Appellant shown the Examiner reversibly erred in finding O'Connor discloses a method having a step of detecting a light distribution along a closing line of the openable member?

FACTUAL FINDINGS & PRINCIPLES OF LAW

We rely on the factual findings noted above. In addition to the principles of law noted above, the initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention rests upon the examiner. *Ex parte Levy*, 17 USPQ2d 1461, 1463-64 (BPAI 1990) citing, *In re Piasecki*, 745 F.2d 1468, 223 USPQ 785 (Fed.Cir. 1984). In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art. *Id.*

ANALYSIS

The Examiner stated in the Answer, as to “[c]laims 7-9 and 21-23: [t]he method steps are inherent in the product structure discussed above regarding claims 1-4, 6, and 18-20. Further discussion is omitted.” and “Claims 12 and 13: O’Connor et al. addresses all the limitations of claims 7-9, in addition to disclosing that a predetermined threshold has been stored in memory to adjust the difference between the energy levels when an obstacle is detected” (Ans. 4).

We do not find the Examiner’s argument persuasive because the claim 8 limitation is for a step of detecting a light distribution along a closing line. The Specification clarifies the meaning of “light distribution.” As shown in Fig. 2, the Specification discloses a histogram 22 of light intensity (y-axis) for positions along the window edge 10 (FF 5, 6). The distribution is created by use of 10 pixels in each row of a 128 x 128 pixel CCD sensor (FF 6). From this discussion, we determine light distribution to be the amount of light as a function of points along the length of the top edge, or closing line, of the window opening.

In contrast, O’Connor relies on emitters which project an “energy curtain” within the window aperture and a single fixed photo diode which measures changes in the total intensity of reflected light across the entire window opening. As noted, an obstacle placed anywhere in the curtain changes the reflected portion of the curtain, which is detected by the receiver (FF 13, 14). We find nothing explicitly or inherently taught in O’Connor which teaches of a step of detecting a *distribution of light along the closing line* and the Examiner has not set-forth a basis-in-fact or technical reasoning to support a finding that O’Connor inherently discloses the claim 8 feature. O’Connor teaches only detecting the net total light reflected within the area

of the window opening, regardless of the position of an obstacle with respect to the closing line of the window opening.

Accordingly, we decide the second issue affirmatively. We reverse the Examiner's § 102 rejection of claims 8-13 over O'Connor.

CLAIM 18

Appellant contends O'Connor does not disclose a system in which the operation of a direct detector is adapted according to the openable member position information from an indirect detector (*see* App. Br. 10).

ISSUE

Has Appellant shown the Examiner reversibly erred in finding O'Connor discloses a system in which a direct controller is adapted according to the position information from an indirect detector?

FACTUAL FINDINGS & PRINCIPLES OF LAW

We rely on factual findings and principles of law noted above.

ANALYSIS

We begin our analysis by construing the claim 18 phrase "adapted according to." Neither party explicitly proffers a definition of the claim phrase. We do not find an explicit or implicit definition of "adapted according to" in the Specification.

Merriam-Webster's dictionary defines *adapt* as "to make fit (as for a specific or new use or situation) often by modification" (FF 22). Merriam-Webster's dictionary further defines *accord* as, "to be consistent or in harmony; agree" (FF 23). We therefore construe the claim phrase "adapted according to" as made to fit, such as by modification, so as to be consistent or in harmony with the openable member position information. Having

properly construed the claim phrase, we now address Appellant's arguments regarding claim 18.

We already found above under the first issue that O'Connor teaches a direct detector, the operating parameters of which are defined by openable member position information from an indirect detector. In fact, O'Connor plainly discloses that the openable member position information from the indirect detector (i.e., the contact detector) is used to adjust the threshold values for the direct detector (i.e., the non-contact detector). Accordingly, O'Connor teaches modifying the threshold values of the direct detector to agree with the position information provided by the indirect detector (i.e., the non-contact detector) (FF 15).

Accordingly, we decide the third issue negatively. We affirm the Examiner's § 102 rejection of claims 18, 21, and 24 over O'Connor.

ORDER

The rejection of claims 1-4, 6, 7, 14, 15, and 17-26 under § 102(b) over O'Connor is **AFFIRMED**.

The rejection of claims 8-13 under § 102(b) over O'Connor is **REVERSED**.

The rejection of claims 5 and 16 under § 103(a) over O'Connor in view of Breed is **AFFIRMED**.

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1) (2008).

AFFIRMED-IN-PART

Appeal 2008-003348
Application 10/673,027

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